

OPERATION AND PARTS MANUAL



Mikasa **SERIES**
MODEL MT54F
TAMPING RAMMER
(ROBIN EH09 GASOLINE ENGINE)

Revision #8 (01/10/12)

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publication, visit our website at:
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THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.



 WARNING 
CALIFORNIA — Proposition 65 Warning
Engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

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MIKASA MT54F Tamping Rammer

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NOTICE

Specification and part number are subject to change without notice.

PARTS ORDERING PROCEDURES

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Effective:
January 1st, 2006

Order via Internet (Dealers Only):

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- View Parts Diagrams
- Order Parts
- Print Specification Information



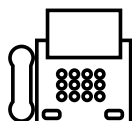
If you have an MQ Account, to obtain a Username and Password, E-mail us at: parts@multiquip.com.

To obtain an MQ Account, contact your District Sales Manager for more information.

Goto www.multiquip.com and click on **Order Parts** to log in and save!

Use the **internet** and qualify for a **5% Discount** on *Standard orders* for all orders which include complete part numbers.*

Note: Discounts Are Subject To Change



Order via Fax (Dealers Only):

All customers are welcome to order parts via Fax.

Domestic (US) Customers dial:
1-800-6-PARTS-7 (800-672-7877)

Fax your order in and qualify for a **2% Discount** on *Standard orders* for all orders which include complete part numbers.*

Note: Discounts Are Subject To Change



Order via Phone: Domestic (US) Dealers Call:
1-800-427-1244

Non-Dealer Customers:

Contact your local Multiquip Dealer for parts or call 800-427-1244 for help in locating a dealer near you.



International Customers should contact their local Multiquip Representatives for Parts Ordering information.

When ordering parts, please supply:

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|---|--|
| <input type="checkbox"/> Dealer Account Number | <input type="checkbox"/> Specify Preferred Method of Shipment: |
| <input type="checkbox"/> Dealer Name and Address | <input checked="" type="checkbox"/> UPS/Fed Ex <input checked="" type="checkbox"/> DHL |
| <input type="checkbox"/> Shipping Address (if different than billing address) | <input type="checkbox"/> Priority One <input checked="" type="checkbox"/> Truck |
| <input type="checkbox"/> Return Fax Number | <input type="checkbox"/> Ground |
| <input type="checkbox"/> Applicable Model Number | <input type="checkbox"/> Next Day |
| <input type="checkbox"/> Quantity, Part Number and Description of Each Part | <input type="checkbox"/> Second/Third Day |

NOTICE

All orders are treated as *Standard Orders* and will ship the same day if received prior to 3PM PST.

WE ACCEPT ALL MAJOR CREDIT CARDS!



SAFETY INFORMATION

Do not operate or service the equipment before reading the entire manual. Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.



SAFETY MESSAGES

The four safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator and are preceded by one of four words: **DANGER**, **WARNING**, **CAUTION** or **NOTICE**.

SAFETY SYMBOLS

! DANGER

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY**.

! WARNING

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.

! CAUTION

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY**.

NOTICE

Addresses practices not related to personal injury.

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Respiratory hazards
	Accidental starting hazards
	Eye and hearing hazards

SAFETY INFORMATION

GENERAL SAFETY

CAUTION

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.



- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.
- **NEVER** operate this equipment under the influence of drugs or alcohol.



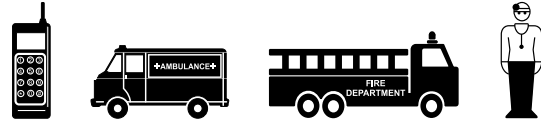
- **ALWAYS** check the equipment for loosened threads or bolts before starting.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.

NOTICE

- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.
- **NEVER** use accessories or attachments that are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **ALWAYS** know the location of the nearest fire extinguisher.
- **ALWAYS** know the location of the nearest first aid kit.



- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site**. Also, know the phone numbers of the nearest **ambulance, doctor** and **fire department**. This information will be invaluable in the case of an emergency.



RAMMER SAFETY

DANGER

- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death**.



WARNING

- **NEVER** disconnect any **emergency or safety devices**. These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.
- **DO NOT** use this machine on ground that is harder than the machine can handle, or for driving pilings or tamping rock beds. Furthermore, use of the machine on sloping ground, such as the side of an embankment, may make the machine unstable and can cause an accident. It can also result in premature machine wear due to uneven loads on the machine.

Use the machine with confidence for tamping earth and sand, soil, gravel, and asphalt. **DO NOT** use the machine for other types of jobs.

CAUTION

- **NEVER** lubricate components or attempt service on a running machine.

NOTICE

- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.

SAFETY INFORMATION

ENGINE SAFETY

DANGER

- The engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.
- The engine of this equipment requires an adequate free flow of cooling air. **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.



WARNING

- **DO NOT** place hands or fingers inside engine compartment when engine is running.
- **NEVER** operate the engine with heat shields or guards removed.
- **DO NOT** remove the engine oil drain plug while the engine is hot. Hot oil will gush out of the oil tank and severely scald any persons in the general area of the rammer.



CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.



NOTICE

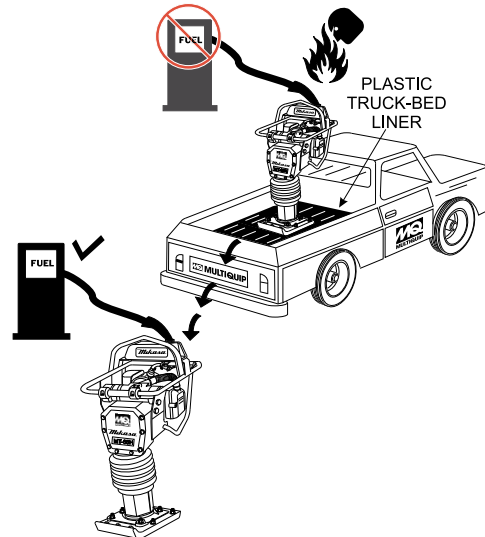
- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating in speed ranges above the maximum allowable.



FUEL SAFETY

DANGER

- **DO NOT** add fuel to equipment if it is placed inside truck bed with plastic liner. Possibility exists of explosion or fire due to static electricity.



- **DO NOT** start the engine near spilled fuel or combustible fluids. Fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with **flammable** liquids.
- **DO NOT** fill the fuel tank while the engine is running or hot.
- **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system.
- Store fuel in appropriate containers, in well-ventilated areas and away from sparks and flames.
- **NEVER** use fuel as a cleaning agent.
- **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.



TRANSPORTING SAFETY

CAUTION


- NEVER allow any person or animal to stand underneath the equipment while lifting.

NOTICE

- Before lifting, make sure that the equipment parts (hook and vibration insulator) are not damaged and screws are not loose or missing.
- Always make sure crane or lifting device has been properly secured to the lifting bail (hook) of the equipment.
- **ALWAYS** shutdown engine before transporting.
- **NEVER** lift the equipment while the engine is running.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Use adequate lifting cable (wire or rope) of sufficient strength.
- Use one point suspension hook and lift straight upwards.
- **DO NOT** lift machine to unnecessary heights.
- **ALWAYS** tie down equipment during transport by securing the equipment with rope.
- Never allow any person or animal to stand underneath the equipment while lifting.

ENVIRONMENTAL SAFETY

NOTICE

- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters. 
- **DO NOT** use food or plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source.

Definition of Tamping Rammer

The Mikasa MT-54F tamping rammer is a powerful compacting tool capable of applying a tremendous force in consecutive impacts to a soil surface. Its applications include soil compacting for road, embankments and reservoirs as well as backfilling for gas pipelines, water pipelines and cable installation work.

The impact force of the MT-54F levels and uniformly compacts voids between soil particles to increase dry density.

Circular motion is converted to create impact force. The MT-54F tamping rammer develops a powerful compacting force at the foot of the rammer. To maintain optimum performance, proper operation and service are essential.

Construction of Tamping Rammer

The Mikasa MT-54F Tamping Rammer is equipped with an Robin air cooled, four cycle gasoline engine. Transmission of the power takes place by increasing the engine speed to engage the centrifugal clutch.

Rammer Gearbox and Spring Cylinder

The Mikasa MT-54F uses an oil bath lubrication system. Always check the oil level through the oil level sight glass at the rear of the tamper foot.

Controls

Before starting the MT-54F Tamping Rammer, identify and understand the function of the controls, see Figure 1 on page 11.

SPECIFICATIONS

Table 1. MT-54F Rammer Specifications

MODEL	MT-54F U.S. (metric)
Overall Height	40.5 in. (1,025 mm)
Overall Width	14.6 in (370 mm)
Over Length	26.4 in (670 mm)
Shoe Size	10.4 x 13.4 in. (265 x 340 mm)
Blows/minute	690
Impact Force	2,250 lbs./blow (1,110 kg/blow)
Clutch	Automatic Centrifugal
Operating Weight	126 lbs. (57 kg)

Table 2. Robin EH-09 STD Engine Specifications

MODEL	ROBIN EH-09 STD ENGINE
Type	Air-Cooled 4 Stroke Gasoline Engine
Piston Displacement	5.20 cu.in. (86 cc)
Max. Output	2.4 hp/3,600 rpm (1.8 KW)
Max. Governed Speed, No Load	3,600 rpm
Cooling System	Air-Cooled
Lubrication System	Fuel-Lubrication Oil Spraying System
Fuel	Unleaded gasoline
Starting System	Recoil Starter

NOTE

Specifications are general and are subject to change without notice. If exact measurements are required, equipment should be weighed and measured.

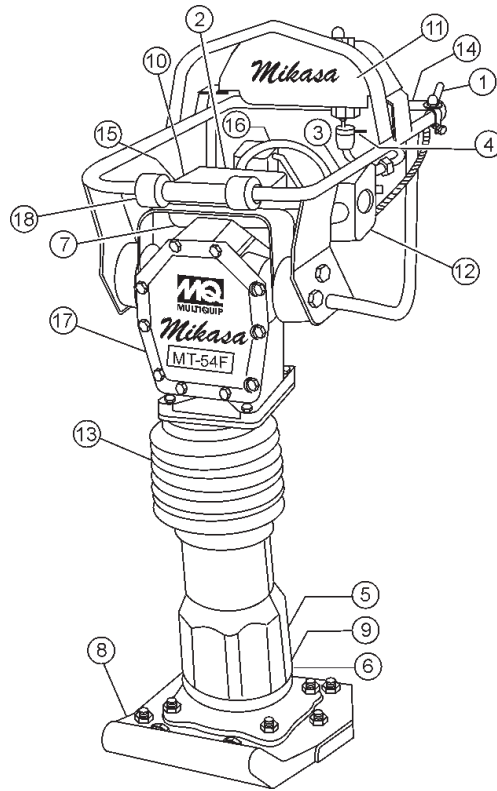


Figure 1. MT-54F Tamping Rammer

Figure 1 shows the location of the controls and components for the MT-54F Tamping Rammer. The functions of each control is described below:

1. **Throttle Lever** – Controls engine speed and the tamping action of the rammer.
2. **Engine Stop Switch** – Controls the starting and stopping of the engine. Switch must be in the "ON" position when starting the engine.
3. **Choke Lever** – Used when starting the engine. Normally used in cold weather conditions. In cold weather turn the choke lever to the fully closed position, in warm weather set choke lever half way or completely open.
4. **Fuel Shut-Off Valve** – Supplies fuel from the fuel tank to the engine. To begin fuel flow move the fuel shut-off valve downward.
5. **Oil Bath Fill Plug** – Open this plug to add oil to the oil bath reservoir.
6. **Drain Valve** – Open this valve to remove oil from the bellows.
7. **Pre-Cleaner** – Pre-cleans (first stage) dirt and other debris from entering the engine.
8. **Foot** – Laminated wood with tempered steel plate for superior shock absorption.
9. **Oil Level Sight Glass** – Indicates the level of oil in the oil bath reservoir.
10. **Recoil Starting Handle** – Used when starting the engine. Pull starter handle sharply and quickly, then return starter handle to starter case before releasing.
11. **Fuel Tank/Cap** – Poly fuel tank to avoid rust and corrosion, remove this cap to add gasoline.
12. **Engine Air Cleaner** – Prevents dirt (second stage) and other debris from entering the engine.
13. **Bellows** – Reservoir for oil bath.
14. **Handle** – To operate rammer **GRIP** handle assembly firmly on both sides.
15. **Muffler** – Used to reduce noise and emissions.
16. **Spark Plug** – Provides spark to the ignition system, replace with engine manufactures recommended type spark plug.
17. **Nameplate** – Displays information regarding the rammer.

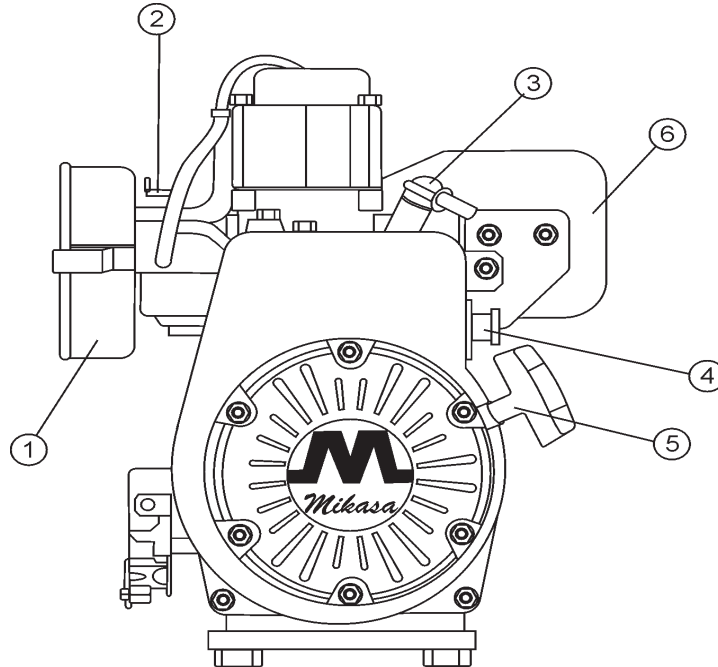


Figure 1-A. Engine Controls and Components

INITIAL SERVICING

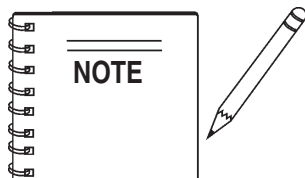
The engine (Figure 1-A) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's Engine manual for instructions and details of operation and servicing.

1. **Secondary Air Cleaner** – Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter canister to gain access to filter element.
2. **Choke Lever** –Used when starting the engine. Normally used in cold weather conditions. In cold weather turn the choke lever to the fully closed position, in warm weather set choke lever half way or completely open.
3. **Spark Plug** – Provides spark to the ignition system. Set spark plug gap to 0.02 - 0.03 inch (0.6 - 0.7 mm). Clean spark plug once a week.
4. **Engine ON/OFF Switch** – Controls the starting and stopping of the engine. Switch must be in the "ON" position when starting the engine.

5. **Recoil Starter (pull rope)** – Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
6. **Muffler** – Used to reduce noise and emissions.

CAUTION - Burn Hazard

Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.



Operating the engine without an air filter, with a damaged air filter, or a filter in need of replacement will allow dirt to enter the engine,

7. **Dipstick/Oil Filler Cap** – Remove this cap to determine if the engine oil is low. Add oil through this filler port as recommended in Table 3.
8. **Oil Drain Plug** – Remove this plug to remove oil from the engine's crankcase.

This section is intended to assist the operator with the initial start-up of the MT-54F Tamping Rammer. It extremely important that this section be read carefully before attempting to operate the rammer.

DO NOT use your rammer until this section is thoroughly understood.

CAUTION:



Failure to understand the operation of the MT-54F Tamping Rammer could result in severe damage to the trowel or personal injury.

Rammer Gearbox and Spring Cylinder Oil Bath

This unit uses an oil bath lubrication system. Perform the following:

1. Check the oil level through the oil level sight glass (Figure 2) at the rear of the tamper foot.

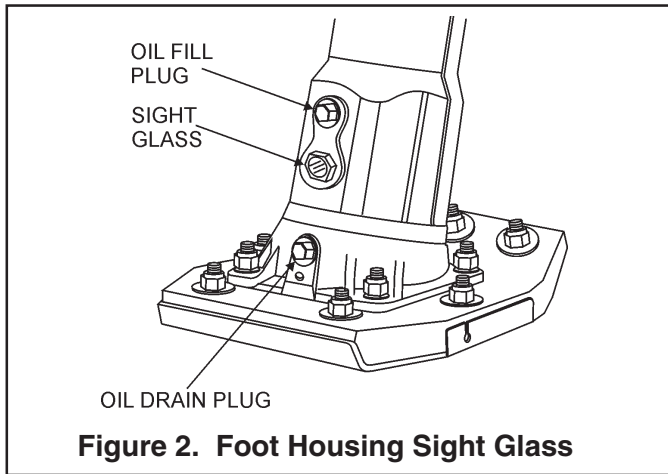


Figure 2. Foot Housing Sight Glass

2. If oil is not visible, add 10W-30 motor oil into the oil fill plug opening (Figure 2). The bath contains approximately 1.7 pints (800 cc.)

NOTE

The oil level should be kept at the half way point of the sight glass.

Engine

1. Fill the fuel tank (Figure 3) with unleaded gasoline. At the same time, check the engine oil and make it a habit to replenish it often.

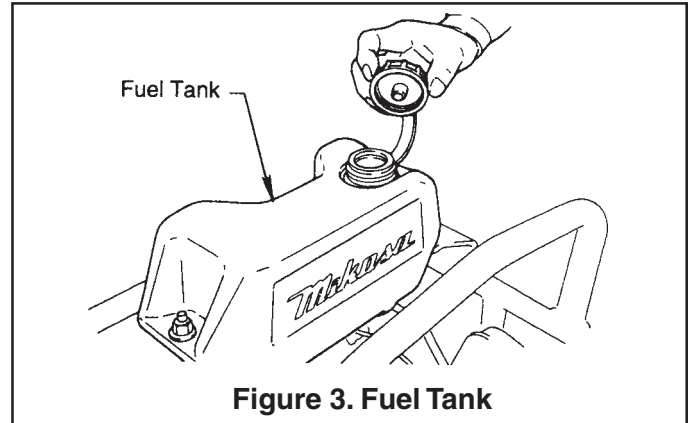


Figure 3. Fuel Tank

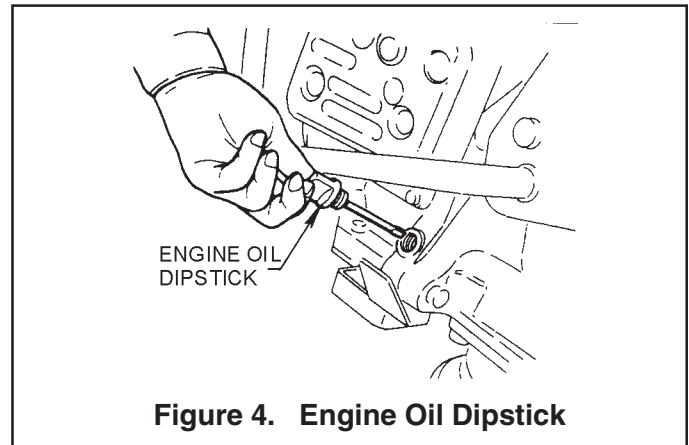


Figure 4. Engine Oil Dipstick

2. Low levels of oil may result in engine seizure due to high levels of consumption during operations.
3. Check the engine oil level and if the engine oil level is low, it should be refilled. Use the proper motor oil as suggested in the Table 3 below.

Table 3 Motor Oil Grade

Season or Temperature	Grade of motor oil (higher than MS class)
Spring, Summer or Autumn +120° F to +15° F	SAE 30
Winter +40° F to +15° F	SAE 30
Below +15° F	SAE 10W-30

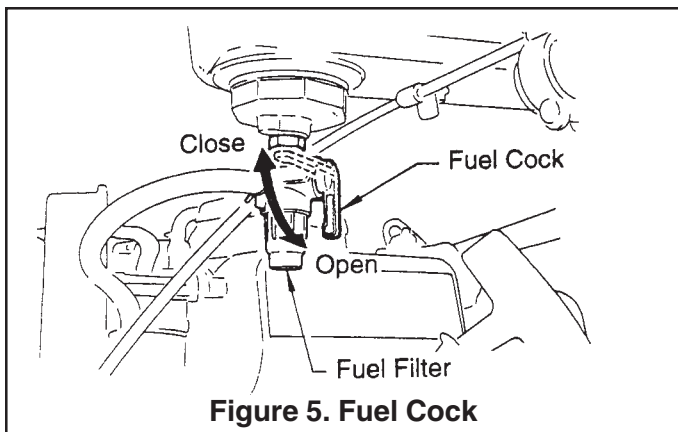
Inspection

1. Check all nuts, bolts fasteners for tightness. Retighten as necessary.
2. Clean any dirt from the recoil starter and foot pedestal. Wipe the entire unit clean before operating.
3. Replace any missing or damaged Safety Operation decals.
4. Adjust height of handle. Adjust handle by loosening nuts and moving handle to suit operation. Retighten nuts.

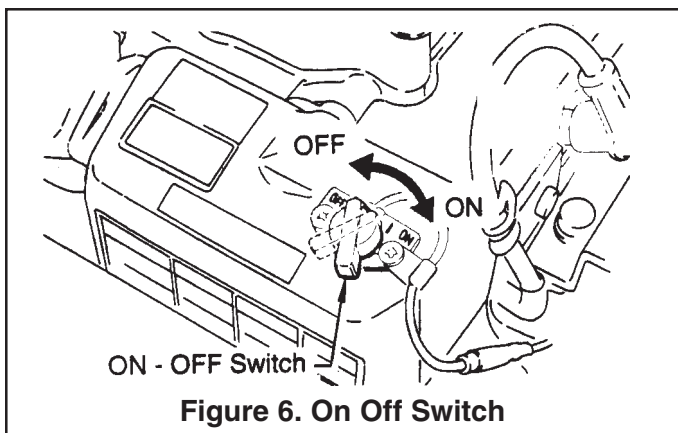
Initial Start-up

When starting the MT-54F Tamping Rammer perform the following:

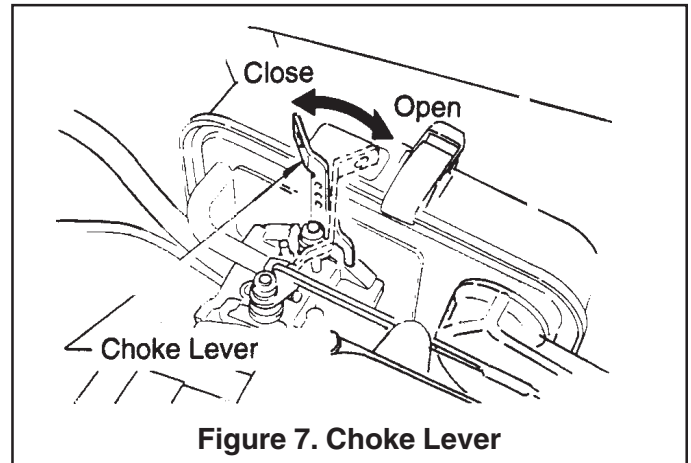
1. Open the fuel shut-off valve by moving the **fuel cock** lever to the **open** position (Figure 5).



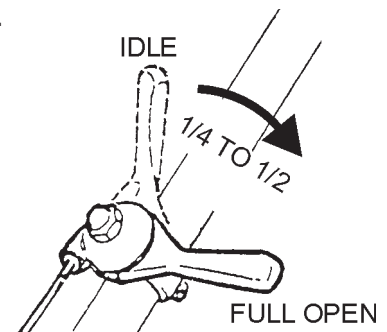
2. Set the engine ON/OFF switch (Figure 6) to the "ON" position (start).



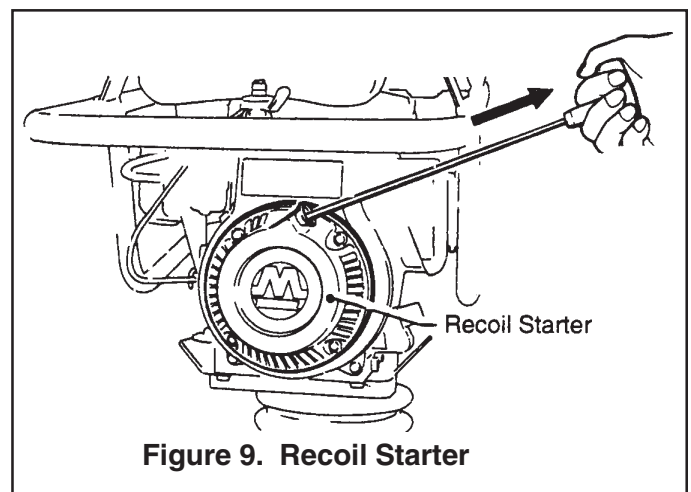
3. Close the choke lever (Figure 7). Turning the choke lever 90 degrees clockwise closes the choke. In cold weather, start the unit with choke fully closed. In warm weather or when the engine is warm, the unit can be started with choke halfway or completely open.



4. Move the throttle lever (Figure 8) between 1/4 to 1/2 from the idle position.



5. Grip the recoil starter (Figure 9) handle and pull it until you feel a slight resistance. Then pull sharply and quickly. Return the recoil starter handle to the starter case before releasing.



- When the engine starts, move the choke lever slowly to the "**FULL OPEN**" position. Warm up the engine by running at low speed for three to five minutes, check for gas leakage or abnormal sounds.
- If the engine does not start after repeated attempts, check the spark plug for excess fuel. Clean and replace the spark plug as needed, then move the choke lever (Figure 7) to the half open position to avoid flooding and repeat steps 1 thru 5.

Operation

- To start the rammer tamping action, move the throttle lever (Figure 10) quickly from **IDLE** (close) to the **FULL OPEN** position. **DO NOT** move the throttle lever slowly as this may cause damage to the clutch or spring.

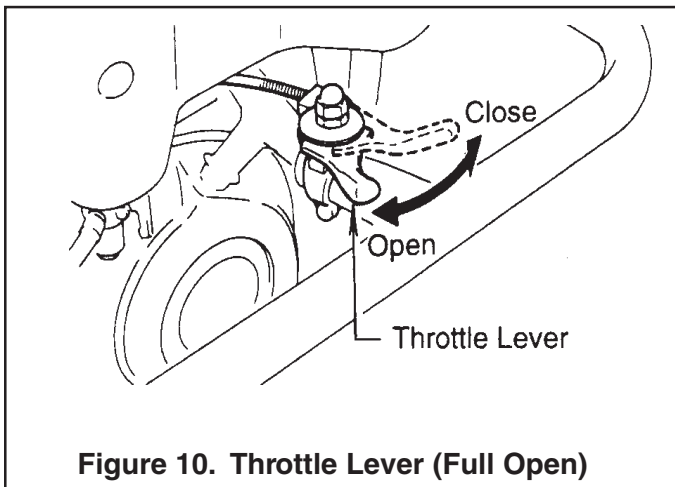


Figure 10. Throttle Lever (Full Open)

CAUTION:



Make sure that the throttle lever is moved to the **FULL OPEN** position. Operating the rammer at less than full speeds can result in damage to the clutch springs or foot

- The MT-54F Tamping rammer is designed to run at 4,000 rpm. At optimum rpm the foot hits at the rate of 690 impacts per minute. Increasing throttle speed past factory set rpm does not increase impacts and may damage unit. The MT-54F is designed to advance while tamping. For faster advance, pull back slightly on the handle so that rear of foot contacts soil first.

- To stop the tamping action, move throttle lever quickly from the **FULL OPEN** to **IDLE** position.

Stopping The Engine

Normal Shutdown

- Move throttle lever quickly from the **FULL OPEN** to **IDLE** position (Figure 11) and run the engine for three minutes at low speed. After the engine **cools**, turn the engine start/stop switch to the "**STOP**" position (Figure 6) until engine comes to a complete stop.

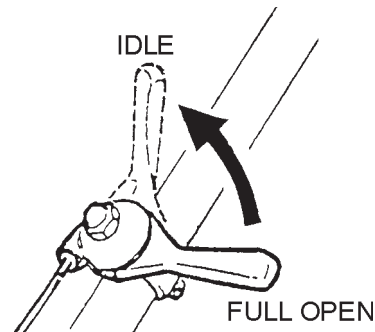


Figure 11. Throttle Lever (Idle)

- Close the fuel shut-off valve by moving the fuel cock lever to the **CLOSED** position. See Figure 5.

Emergency Showdown

- Move the throttle lever quickly to the **IDLE** position, and turn the engine start/stop switch to the **STOP** position.

Maintenance

Perform the scheduled maintenance procedures as indicated:

DAILY

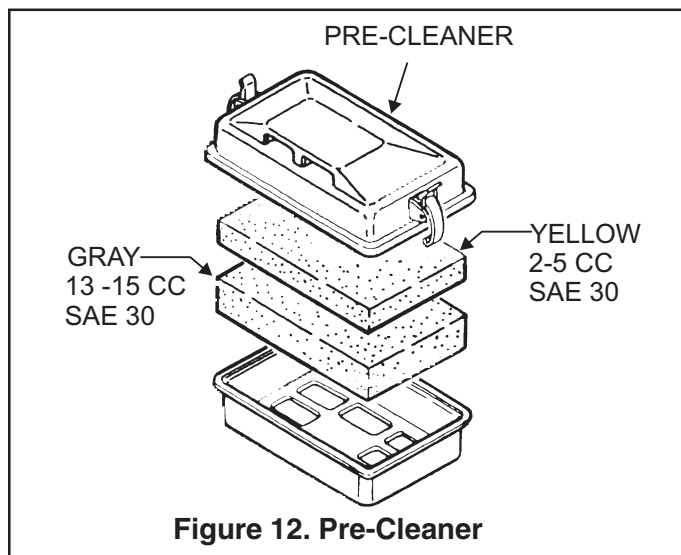
- Thoroughly remove dirt and oil from the engine and control area. Clean or replace the air cleaner elements as necessary. Check and retighten all fasteners as necessary. Check the spring box and bellows for oil leaks. Repair or replace as needed.

WEEKLY

- Remove the fuel filter cap and clean the inside of the fuel tank.
- Remove or clean the filter at the bottom of the tank.
- Remove and clean the spark plug, then adjust the spark gap to 0.02~0.03 inch (0.6~0.7 mm). This unit has electronic ignition, which requires no adjustments.
- Clean air cleaner cover.

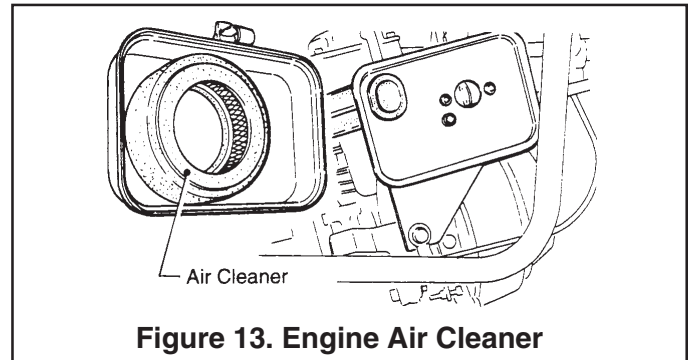
200 - 300 HOURS (Pre-Cleaner)

- Remove the element from the pre-cleaner (Figure 12) at the top of the crankcase (body side) and clean it with cleaning oil (kerosene).



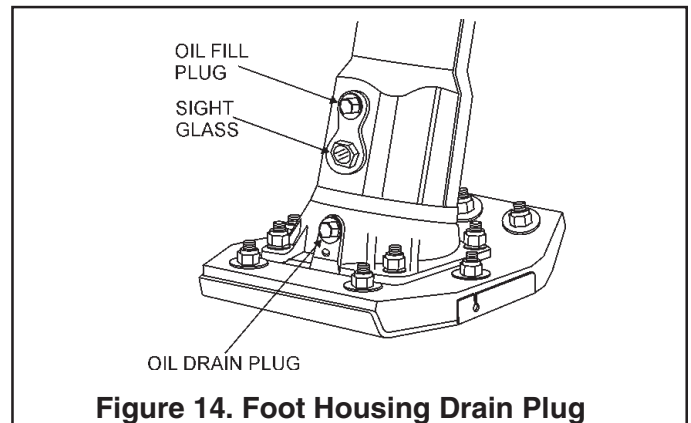
- Lubricate the top element (yellow) with 2~5 cc of engine oil SAE-30.
- Lubricate bottom element (gray) with 13 ~15 cc of engine oil SAE-30 and completely squeeze out the excess oil from the element before installing.

- The air cleaner (Figure 13) on the engine side will hardly be contaminated, if it is, however after cleaning the element with kerosene, dip it in mixed oil consisting of 3 parts of gasoline and 1 part of engine oil. Then tightly squeeze outer primary element (sponge) and shake off well the inner secondary element before installing them.



200 - 300 HOURS (Oil Bath)

- Drain oil reservoir on foot housing (Figure 14). Refill with approximately 1.7 pt. (800cc) of 10W-30 motor oil. Oil should be midway in sight glass. Break in oil should be changed after first 50 hours.



Yearly

- Check the fuel line and the oil line regularly for damage and to ensure that there are no leaks.
- Replace the oil and fuel lines every two years to maintain the performance and flexibility lines.

Long Term Storage

- Drain fuel from fuel tank, fuel line and carburetor.
- Remove spark plug and pour a few drops of motor oil into cylinder. Crank engine 3 to 4 times so that oil reaches all internal parts.
- Clean exterior with a cloth soaked in clean oil.
- Store unit covered with plastic sheet in moisture free and dust free location out of direct sunlight

TROUBLESHOOTING

TABLE 4. ENGINE TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Difficult to start		
Fuel is available but spark plug will not ignite. (Power available at high tension cable).	Ignition plug being bridge?	Check ignition system.
	Carbon deposit at ignition?	Clean or replace ignition.
	Short circuit due to defective insulators?	Replace insulators.
	Improper spark gap?	Set spark plug gap to the correct gap.
Fuel is available but spark plug will not ignite. (Power NOT available at high tension cable).	Short circuit at stop switch?	Check stop switch circuit. Replace stop switch if defective.
	Ignition coil defective?	Replace ignition coil.
Fuel is available and spark plug ignites (compression normal).	Muffler clogged with carbon deposits?	Clean or replace muffler.
	Mixed fuel quality is inadequate?	Check fuel to oil mixture.
	Fuel in use inadequate (water, dust)?	Flush fuel sytem and replace with fresh fuel.
	Air Cleaner clogged?	Clean or replace air cleaner.
Fuel is available and spark plug ignites (compression low).	Defective cylinder head gasket?	Tighten cylinder head bolts or replace head gasket.
	Cylinder worn?	Replace cylinder.
	Spark plug loose?	Tighen spark plug.
Operation not satisfactory		
Not enough power available (compression normal, no miss-firing).	Air cleaner clogged?	
	Air in fuel line?	Bleed (remove air) from fuel line.
	Fuel level in carbureator float chamber improper?	Adjust carbureator float
	Carbon deposits in cylinder?	Clean or replace cylinder
Not enough power available (compression normal, miss-firing).	Ignition coil defective?	Flush fuel sytem and replace with fresh fuel.
	Ignition plug often shorts?	Replace ignition wires, clean ignition.
	Fuel in use inadequate (water, dust)?	Flush fuel sytem and replace with fresh fuel.
Engine overheats.	Mixed fuel quality is inadequate?	Check fuel to oil mixture.
	Excessive carbon depostion in combustion chamber?	Clean or replace crankcase.
	Exhaust or muffler clogged with carbon.	Clean or replace muffler.
	Spark plug heat value incorrect?	Replace spark plug with correct type spark plug.

TROUBLESHOOTING

TABLE 4. ENGINE TROUBLESHOOTING (continued)

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Operation not satisfactory		
Rotational speed fluctuates.	Governor adjustment improper?	Adjust governor to correct lever.
	Governor spring defective?	Clean or replace ignition.
	Fuel flow erratic?	Check fuel line.
	Air taken in through suction line?	Check suction line.
Recoil starter not working properly.	Dust in rotating part?	Clean recoil starter assembly.
	Spring spring failure?	Replace sprial spring.

TABLE 5. RAMMER TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Engine runs but rammer jumps erratically or not at all..	Operating speed of throttle lever is incorrectly set?	Set throttle lever to correct position.
	Oil in excess?	Drain excess oil. Bring to correct level.
	Clutch slips?	Replace or adjust clutch.
	Spring Failure?	Replace sprial spring.
	Speed of engine improper?	Adjust engine speed to correct operating RPM setting.
	Soil over-compacted?	Shut-down machine and test soil.

EXPLANATION OF CODES IN THE REMARKS COLUMN

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

NOTICE

The contents and part numbers listed in the parts section are subject to change **without notice**. Multiquip does not guarantee the availability of the parts listed.

SAMPLE PARTS LIST

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	12345	BOLT.....	1	INCLUDES ITEMS W/%
2%		WASHER, 1/4 IN.....		NOT SOLD SEPARATELY
2%	12347	WASHER, 3/8 IN....	1	MQ-45T ONLY
3	12348	HOSE		A/R ...MAKE LOCALLY
4	12349	BEARING	1	S/N 2345B AND ABOVE

NO. Column

Unique Symbols — All items with same unique symbol

(@, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the “Remarks” column.

Duplicate Item Numbers — Duplicate numbers indicate multiple part numbers, which are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.

NOTICE

When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

PART NO. Column

Numbers Used — Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at the time of publication.

A blank entry generally indicates that the item is not sold separately or is not sold by Multiquip. Other entries will be clarified in the “Remarks” Column.

QTY. Column

Numbers Used — Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the “Remarks” Column.

REMARKS Column

Some of the most common notes found in the “Remarks” Column are listed below. Other additional notes needed to describe the item can also be shown.

Assembly/Kit — All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

“INCLUDES ITEMS W/(unique symbol)”

Serial Number Break — Used to list an effective serial number range where a particular part is used.

Indicated by:

“S/N XXXXX AND BELOW”

“S/N XXXX AND ABOVE”

“S/N XXXX TO S/N XXX”

Specific Model Number Use — Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

“XXXXX ONLY”

“NOT USED ON XXXX”

“Make/Obtain Locally” — Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

“Not Sold Separately” — Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

SUGGESTED SPARE PARTS

MT-54F RAMMER 1 TO 3 UNITS

Qty.	P/N	Description
1	956225020	LEVER, THROTTLE
3	354030030	ELEMENT, YELLOW
3	354030040	ELEMENT, GRAY
1	361910020	CAP, FUEL TANK W/ STRAP
1	954405990	COCK, FUEL ASSY.
1	954404890	FILTER, FUEL TANK
2	301419750	FILTER, IN-LINE FUEL
3	2743261007	ELEMENT, SET ENGINE
1	066000361	BUTTON, STOP
3	0650140460	SPARK PLUG
1	954406010	STRAINER, FUEL TANK
1	956106040	THROTTLE ,WIRE

MT-54F RAMMER 3 TO 5 UNITS

1	956225020	LEVER, THROTTLE
1	956106040	THROTTLE WIRE
5	354030030	ELEMENT, YELLOW
5	354030040	ELEMENT, GRAY
2	351316870	CLAMP, BELLOWS
1	353332870	BELLOWS
1	361910020	CAP, FUEL TANK W/ STRAP
1	954405990	COCK, FUEL ASSY.
2	954404890	FILTER, FUEL TANK
5	301419750	FILTER, IN-LINE FUEL
5	2743261007	ELEMENT SET ENGINE
1	0660000361	BUTTON, STOP
5	0650140460	SPARK PLUG

NOTICE

Part number on this Suggested Spare Parts List may supersede/replace the P/N shown in the text pages of this book.

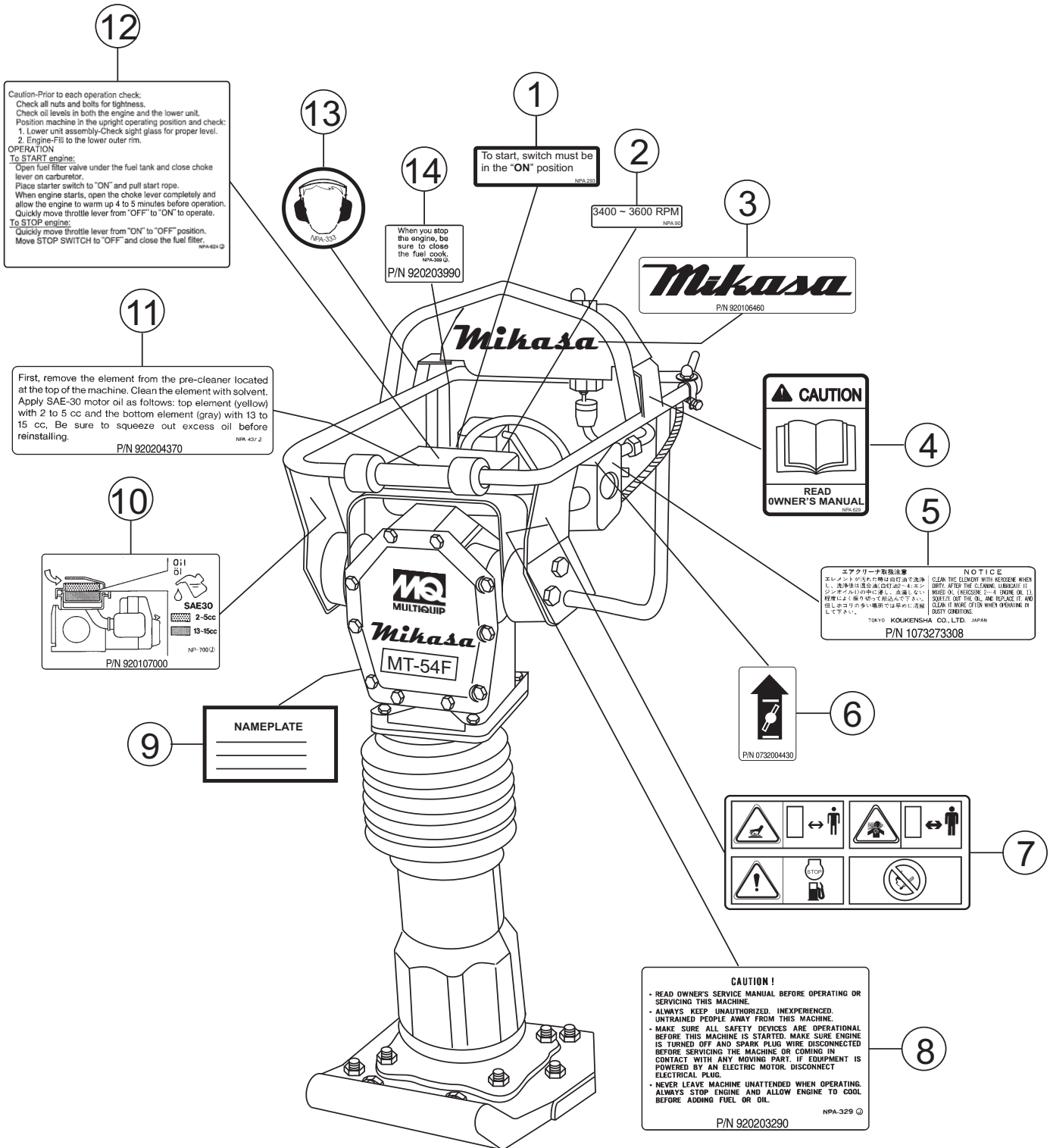
MT-54F RAMMER 5 TO 10 UNITS

2	956225020	LEVER, THROTTLE
2	956106040	THROTTLE WIRE
6	354030030	ELEMENT, YELLOW
6	354030040	ELEMENT, GRAY
4	351316870	CLAMP, BELLOWS
2	353332870	BELLOWS
2	361910020	CAP, FUEL TANK W/STRAP
2	954405990	COCK, FUEL ASSY.
4	954404890	FILTER, FUEL TANK
6	301419750	FILTER, IN-LINE FUEL
3	2743261007	ELEMENT SET ENGINE
3	0660000361	BUTTON, STOP
10	0650140460	SPARK PLUG
2	954406010	STRAINER, FUEL TANK
2	2741550103	GASKET, COMPLETE HEAD
2	2303520101	GASKET, COMPLETE EXHAUST
1	2303262008	GASKET, AIR CLEANER
1	2746230100	CARBURETOR ASSEMBLY
1	050100800	O-RING, UPPER GUIDE CYLINDER
2	050100950	O-RING, MIDDLE GUIDE CYLINDER
1	050930850	O-RING, LOWER GUIDE CYLINDER
1	050100750	O-RING, FOOT PLATE GUIDE CYLINDER

MT-54F RAMMER 10+ UNITS

4	956225020	LEVER, THROTTLE
4	956106040	THROTTLE WIRE
10	354030030	ELEMENT, YELLOW
10	354030040	ELEMENT, GRAY
8	351316870	CLAMP, BELLOWS
4	353332870	BELLOWS
4	361910020	CAP, FUEL TANK W/ STRAP
4	954405990	COCK, FUEL ASSY.
6	954404890	FILTER, FUEL TANK
10	301419750	FILTER, IN-LINE FUEL
10	2743261007	ELEMENT SET ENGINE
4	0660000361	BUTTON, STOP
16	0650140460	SPARK PLUG
1	2747020101	IGNITION COIL
3	2741550103	GASKET, COMPLETE HEAD
3	2303520101	GASKET, COMPLETE EXHAUST
3	2303262008	GASKET, AIR CLEANER
1	301421363	CLUTCH ASSY
1	2746230100	CARBURETOR ASSEMBLY
1	2745020100	RECOIL STARTER ASSEMBLY
2	050100800	O-RING, UPPER GUIDE CYLINDER
4	050100950	O-RING, MIDDLE GUIDE CYLINDER
2	050930850	O-RING, LOWER GUIDE CYLINDER
2	050100750	O-RING, FOOT PLATE GUIDE CYLINDER

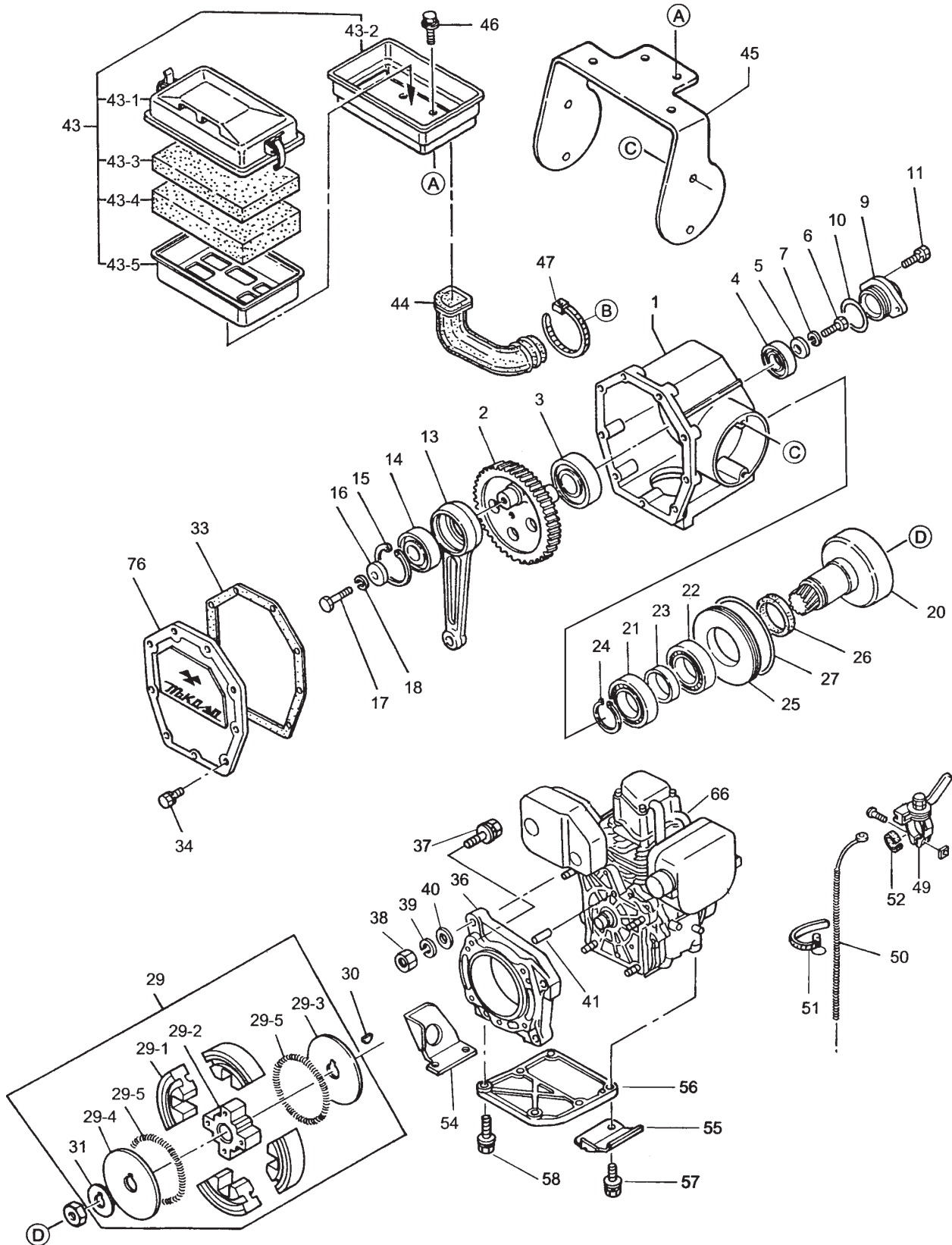
NAMEPLATE AND DECALS



NAMEPLATE AND DECALS

NO	PART NO	PART NAME	QTY.	REMARKS
1*	920202930	DECAL: START SWITCH	1	NPA-293
2*	920200900	DECAL: 3400 ~ 3600 RPM	1	NPA-90
3*	920106460	DECAL: MIKASA	1	
4*	920206290	DECAL: READ OWNER'S MANUAL	1	NPA-629
5*	1073273308	DECAL: NOTICE	1	NPA-831
6*	0732004430	DECAL: START SWITCH	1	
7*	0732004450	DECAL: WARNING	1	
8*	920203290	DECAL: CAUTION	1	NPA-329
9		PLATE, SERIAL NO.	1	CONTACT MQ SERVICE DEPT. W/MODEL & S/N
10*	920107000	DECAL: OIL	1	NP-700
11*	920204370	DECAL: PRE-CLEANER	1	NPA-437
12*	920206240	DECAL: START/STOP ENGINE	1	NPA-624
13*	920203330	DECAL: EAR PROTECTION	1	NPA-333
14*	920203990	DECAL: CLOSE FUEL COCK	1	NPA-399
	DCLMT54F	KIT, DECAL	1	INCLUDES ITEMS W/*

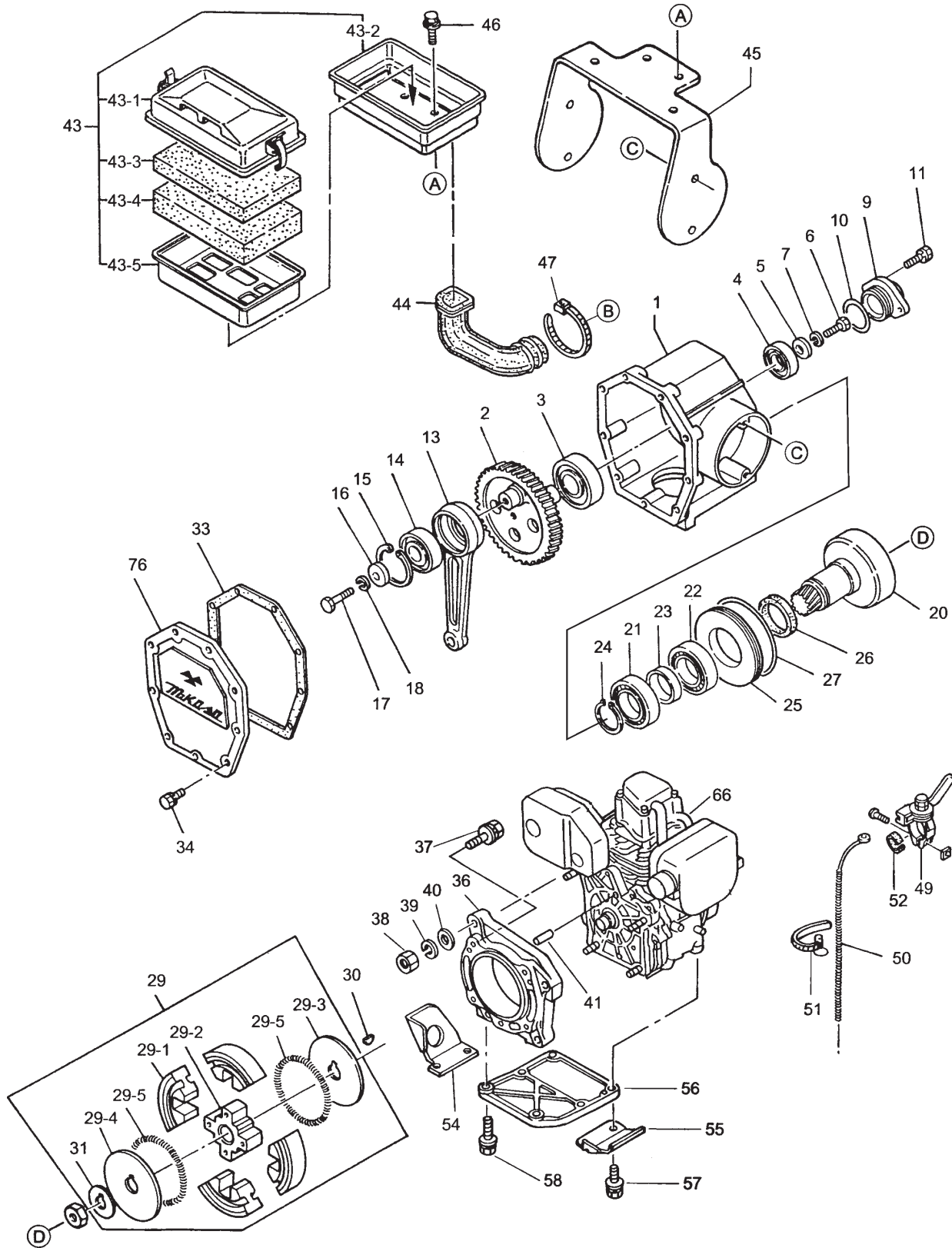
CRANKCASE AND ENGINE ASSY.



CRANKCASE AND ENGINE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	351109060	CRANKCASE	1	
2	351324110	CRANK GEAR	1	
3	040006305	BEARING 6305	1	
4	040006203	BEARING 6203	1	
5	952401450	WASHER 8.5X22X3	1	
6	011208025	BOLT 8X25 T	1	REPLACES 001220825
7	030208200	WASHER M8	1	
9	351434563	BEARING COVER	1	
10	050100350	O-RING G-35	1	
11	002210620	BOLT 6X20 H, SW	4	
13	303010060	CONNECTING ROD	1	
14	040006304	BEARING 6304	1	
15	080100520	STOP RING R-52	1	
16	952400130	WASHER 9304	1	
17	011208025	BOLT 8X25 T	1	REPLACES 001220825
18	030208200	SW M8	1	
20	303010084	PINION	1	
21	040006007	BEARING 6007	1	
22	041006007	BEARING 6007Z	1	
23	351437750	SPACER 35,4-42,7-11	1	
24	080200350	STOP RING S-35	1	
25	351421900	SPACER, CLUTCH DRUM	1	
26	060404010	OIL SEAL TC-40528	1	
27	050300900	O-RING G-90	1	
29	301421363	CLUTCH ASSY. C812E	1	INCLUDES ITEMS W/*
29-1*	943020020	CLUTCH SHOE C812	4	
29-2*	943050050	CLUTCH BOSS C812	1	
29-3*	943060010	CLUTCH GUIDE	1	
29-4*	943060020	CLUTCH GUIDE	1	
29-5*	943030020	CLUTCH SPRING	2	

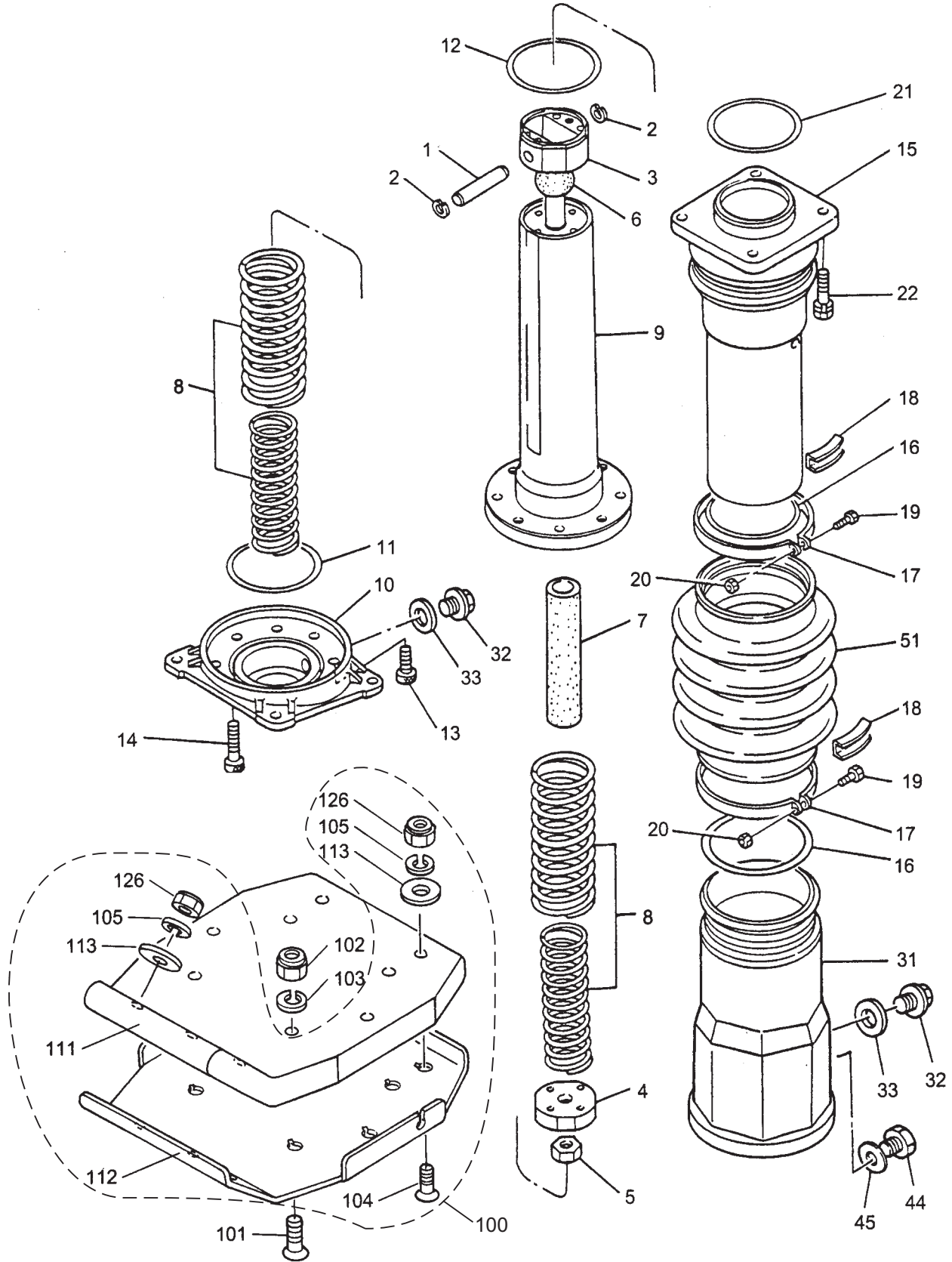
CRANKCASE AND ENGINE ASSY.



CRANKCASE AND ENGINE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
30	0053204201	WOODRUFF KEY	1	
31	301010210	LOCK WASHER CLUTCH	1	
33	351319880	PACKING, FRONT COVER	1	
34	002210620	BOLT 6X20 H, SW	9	
36	2741500103	ADAPTER	1	
37	0011408400	BOLT & WASHER ASSY.	4	
38	0021808000	NUT	4	
39	030208200	SPRING WASHER	4	REPLACES 0032008000
40	0031108000	WASHER	4	
41	0310060020	DOWEL PIN	2	
43	354211841	AIR CLEANER ASSY.	1	INCLUDES ITEMS W/ #
43-1#	354030011	BODY/ W- CLEANER	1	
43-2#	354030020	BACK PLATE	1	
43-3#	354030030	ELEMENT YELLOW	1	
43-4#	354030040	ELEMENT GRAY	1	
43-5#	354030050	ELEMENT FRAME	1	
44	362338680	INTAKE PIPE	1	
45	353336190	CLEANER STAY 3.2T	1	
46	002210820	BOLT 8X20 H, SW	4	
47	507010110	CLAMP TC-200	1	
49	956225020	THROTTLE LEVER ASSY. 25D	1	
50	956106040	THROTTLE WIRE S620-740	1	
51	303010450	BAND	1	
52	959403750	RUBBER, SLIP STOP	1	
54	362338660	OIL GAUGE PROTECTOR	1	
55	362338740	LINK PROTECTOR	1	
56	2741600103	STIFFENER	1	
57	0011408250	BOLT & WASHER	4	
58	0011408300	BOLT & WASHER ASSY.	2	
66	911210902	ENGINE ASSY. EH- 09	1	
76	362214760	FRONT COVER	1	

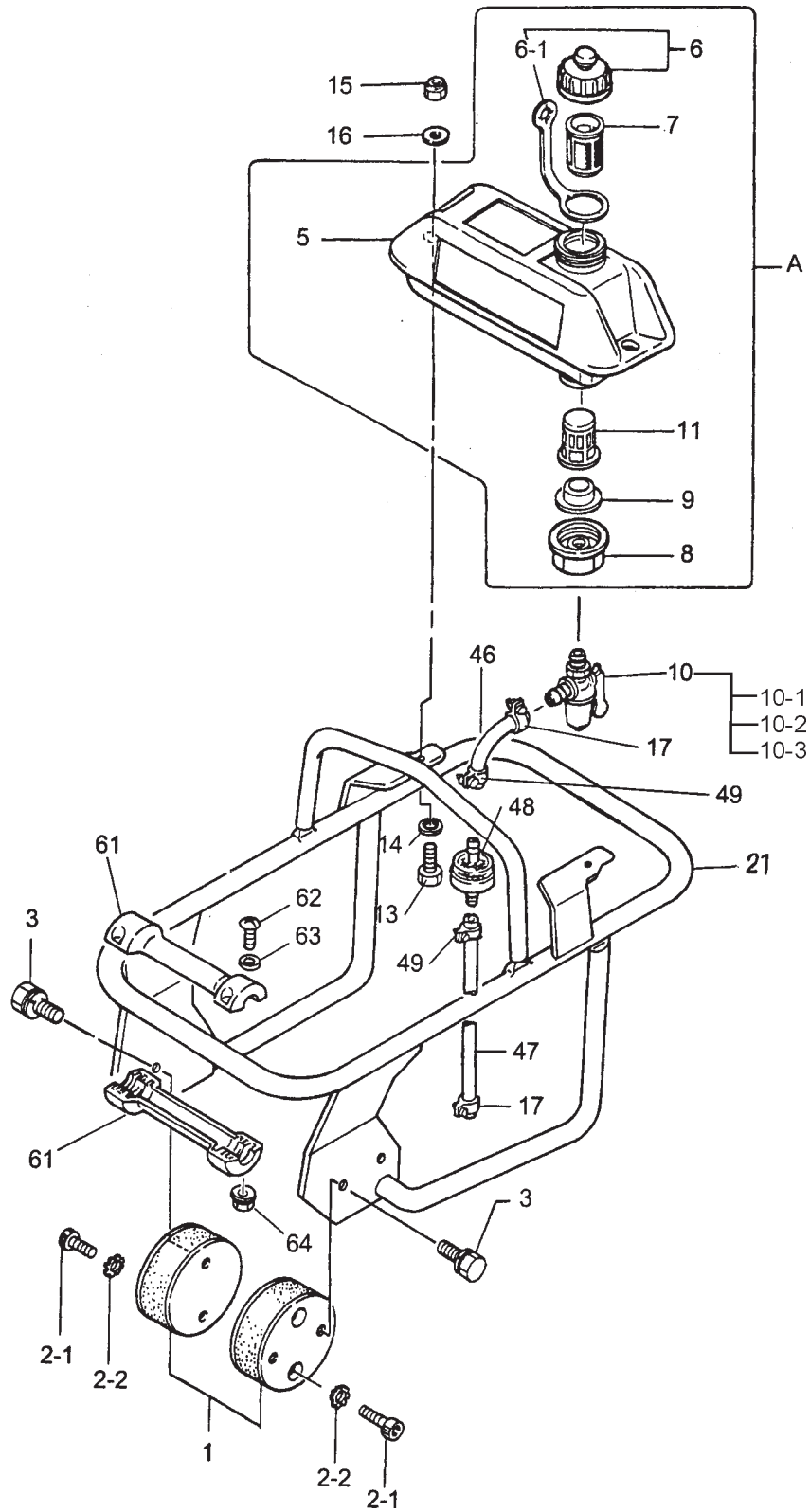
GUIDE CYLINDER AND FOOT ASSY.



GUIDE CYLINDER AND FOOT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	351420390	PISTON PIN	1	
2	080100120	STOP RING R-12	2	
3	351324120	PISTON ROD	1	
4	351420400	PISTON END	1	
5	020116130	NUT M16, P1.5	1	
6	351434200	STOPPER,UPPER	1	
7	351434211	STOPPER, LOWER D:30	1	
8	351324140	MAIN SPRING A,B	2	
9	351324130	SPRING CYLINDER	1	
10	362214820	FOOT PLATE	1	
11	050100750	O-RING G-75	1	
12	050930850	O-RING JAS03085	1	
13	014210020	SOCKET HEAD BOLT 10X20 T	4	REPLACES 001521020
14	014210035	SOCKET HEAD BOLT 10X35 T	4	REPLACES 001521035
15	351209590	GUIDE CYLINDER	1	
16	050100950	O-RING G-95	2	
17	351316870	BELLOWS CLAMP	2	
18	351433250	BAND GUIDE / BELLOWS	2	
19	001210840	BOLT 8X40 H	2	REPLACES 001210840
20	020108060	NU T M8	2	REPLACES 020308060
21	050100800	O-RING	1	
22	012010040	BOLT 10X40 H	4	REPLACES 002211040
31	351109020	PROTECTIVE SLEEVE	1	
32	953405270	PLUG 1/4X14 13L	2	
33	953405260	PACKING 1/4	2	
44	959010150	LEVEL GAUGE, PLUG TYPE	1	
45	953404670	COOPER PACKING 17X25.5X1	1	
51	353332870	BELLOWS	1	
100	362910030	FOOT ASSY. 265W	1	INCLUDES ITEMS W/ * 11" X 13.5 (WxL)
101	015112060	SUNK HEAD BOLT 12 X 70 H	4	REPLACES 001611253
102	021112140	NYLON NUT M12	4	REPLACES 022711214
103	030212300	WASHER M12	4	
104*	015110055	SUNK HEAD BOLT 10X55 H	7	REPLACES 001611051 INCLUDES ITEMS W/ #
105*	030210250	WASHER M10	7	
111*	362338750	FOOT 265W (CUT-TYPE)	1	
112*	362338760	METAL SHEET 265W (CUT- TYPE)	1	
113*#	301010540	WASHER 11X34X3.2	7	
126*	022711012	NYLON NUT M10	7	

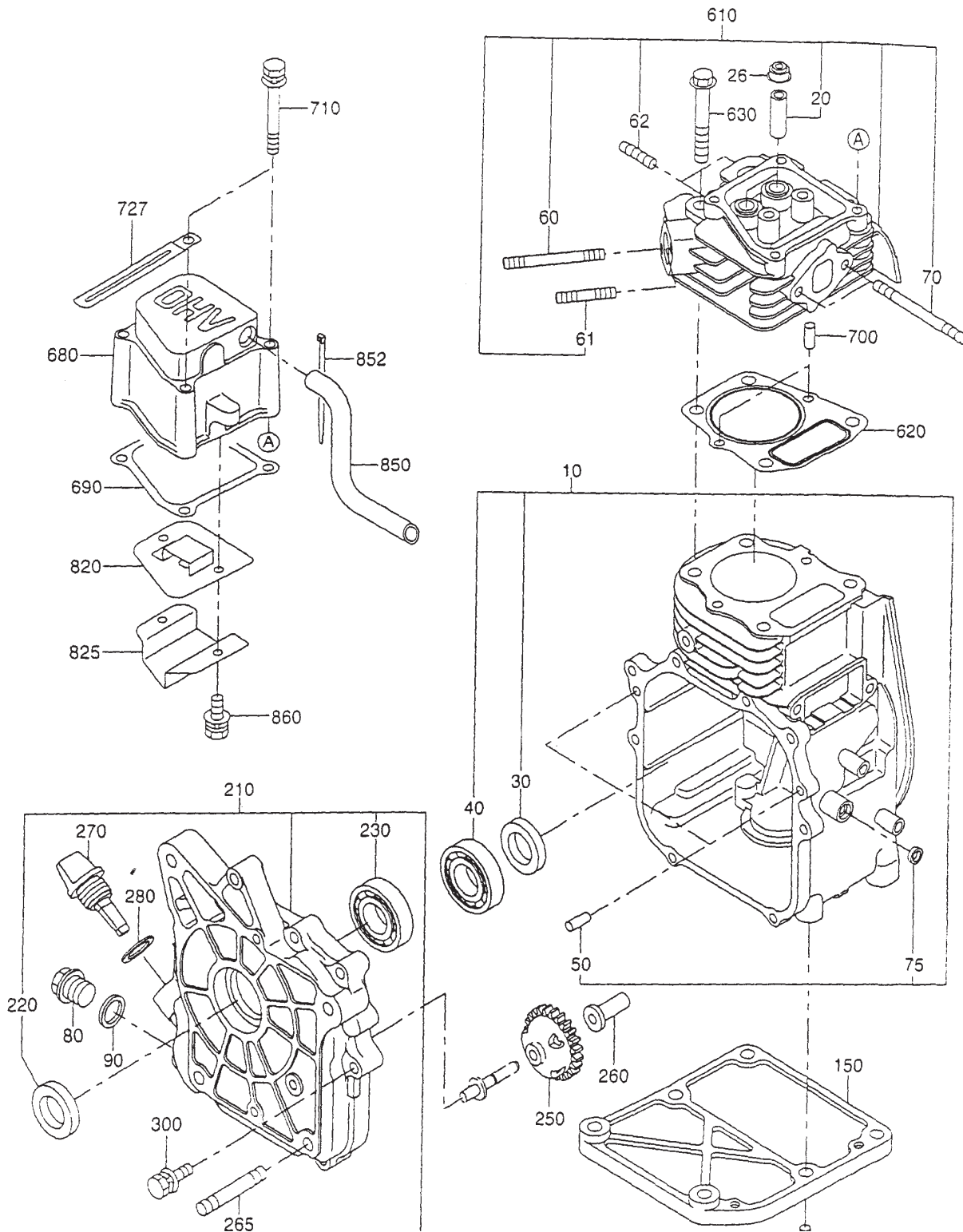
TANK AND HANDLE ASSY.



TANK AND HANDLE ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
A	305910030	FUEL TANK ASSY.,2L	1	INCLUDES ITEMS W/%
1	351337070	SHOCK ABSORBER	2	INCLUDES ITEMS W/#
2-1#	001521020	SOCKET HEAD BOLT 10X20 T	4	REPLACES 001521020
2-2#	033121009	TOOTHED LOCK WASHER B M10	4	
3	012210020	BOLT 10X20 H,SW	4	REPLACES 002211020
5%	305112820	FUEL TANK 2L (P)	1	
6%	361910020	TANK CAP ASSY. (ORANGE)	1	INCLUDES ITEM W/*
6-1*%	353449010	STRAP, OIL TANK	1	
7%	954404890	FILTER, TANK	1	
8%	351437785	HOLDER, COCK	1	
9%	954406020	PACKING, FUEL TANK	1	
10	954405990	FUEL COCK ASSY.	1	INCLUDES ITEMS W/◆
10-1◆	0642001410	CUP	1	
10-2◆	0642001420	SCREEN	1	
10-3◆	0642001430	RUBBER PACKING	1	
11%	954406010	STRAINER	1	
13	011208030	BOLT	2	REPLACES 001220830
14	030208200	WASHER M8	2	
15	022710809	NYLON NUT M8	2	
16	952401450	WASHER 8.5X22X3	2	
17	954404590	HOSE BAND 9.5D	2	
21	362116050	HANDLE	1	
46	351436350	FUEL HOSE R-150	1	
47	351435160	FUEL HOSE B-95	1	
48	301419750	FUEL FILTER CP, MQ75MIC.	1	
49	301420730	HOSE BAND	2	REPLACES 954403030
61	361910040	ROLLER, W/ PIN	2	REPLACES 955200051
62	091005025	SCREW 5X25	4	
63	031105080	WASHER M5	4	
64	022610505	FLANGE NUT M5 H	4	

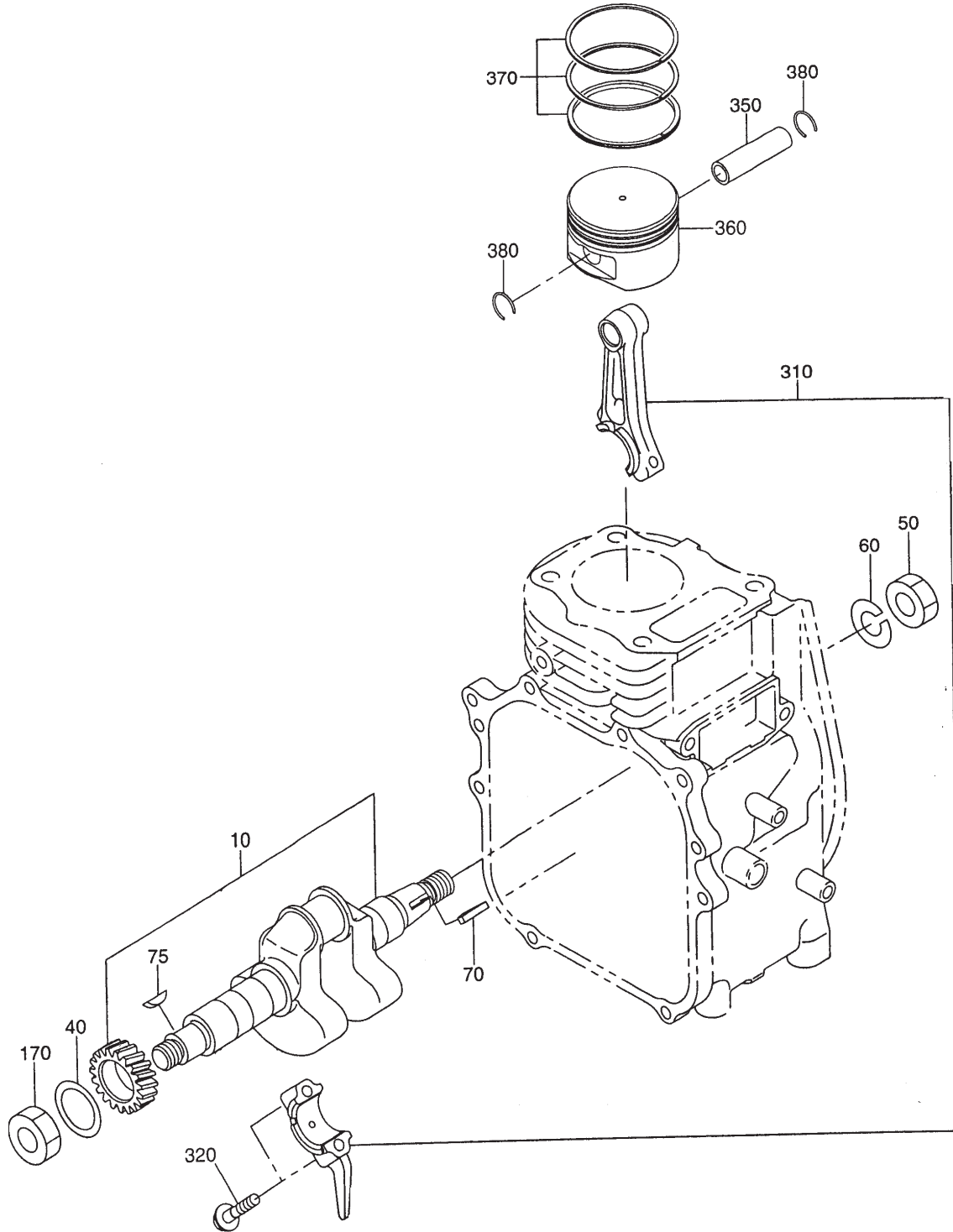
ROBIN EH09 ENGINE — CRANKCASE ASSY.



ROBIN EH09 ENGINE — CRANKCASE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2741010121	CRANKCASE CP	1	INCLUDES ITEMS W/#
20%	2371420203	VALVE GUIDE	2	
26	2371600801	STEM SEAL CP	1	
30#	0440200070	OIL SEAL 20X32X6	1	
40#	0600200140	BALL BEARING	1	
50#	0310060020	DOWEL PIN	2	
60%	0013906600	STUD	1	
61%	0105060200	STUD	1	
62%	0105060170	STUD	2	
70%	0105060160	STUD	2	
75#	0440060010	OIL SEAL 6X10X2.5	1	
80	0401140030	PLUG	1	
90	0211140020	GASKET	1	
150	2741600113	STIFFENER	1	
160	0011408250	BOLT & WASHER	2	
210	2741100131	MAIN BEARING COVER	1	INCLUDES ITEMS W/*
220*	0440200110	OIL SEAL 20X32X6	1	
230*	0600200140	BALL BEARING	1	
250	2304500301	GOVERNOR GEAR CP	1	
260	2054190103	GOVERNOR SLEAVE	1	
265	0013908500	STUD	4	
270	2306360113	OIL GAUGE	1	
280	0213160020	GASKET	1	
300	0130060200	BOLT & WASHER	9	
610	2741300121	CYLINDER HEAD CP	1	INCLUDES ITEMS W/%
620	2741550103	GASKET, HEAD	1	
630	0110080210	FLANGE BOLT	4	
680	2741550203	ROCKER COVER	1	
690	2741600403	GASKET (ROCKET COVER)	1	
700	0310060020	DOWEL PIN	2	
710	0011406600	BOLT & WASHER ASSY.	4	
727	0566000250	CLAMP	1	
820	2741440101	BREATHER PLATE CP	1	
825	2741440503	OIL SHELTER PLATE	1	
850	2741610103	BREATHER PIPE	1	BELOW UNIT S/N G-4067
850	2741610203	BREATHER PIPE	1	UNIT S/N G-4067 & ABOVE
852	0563000020	WIRE BAND	1	
860	0011305100	BOLT & WASHER ASSY.	2	

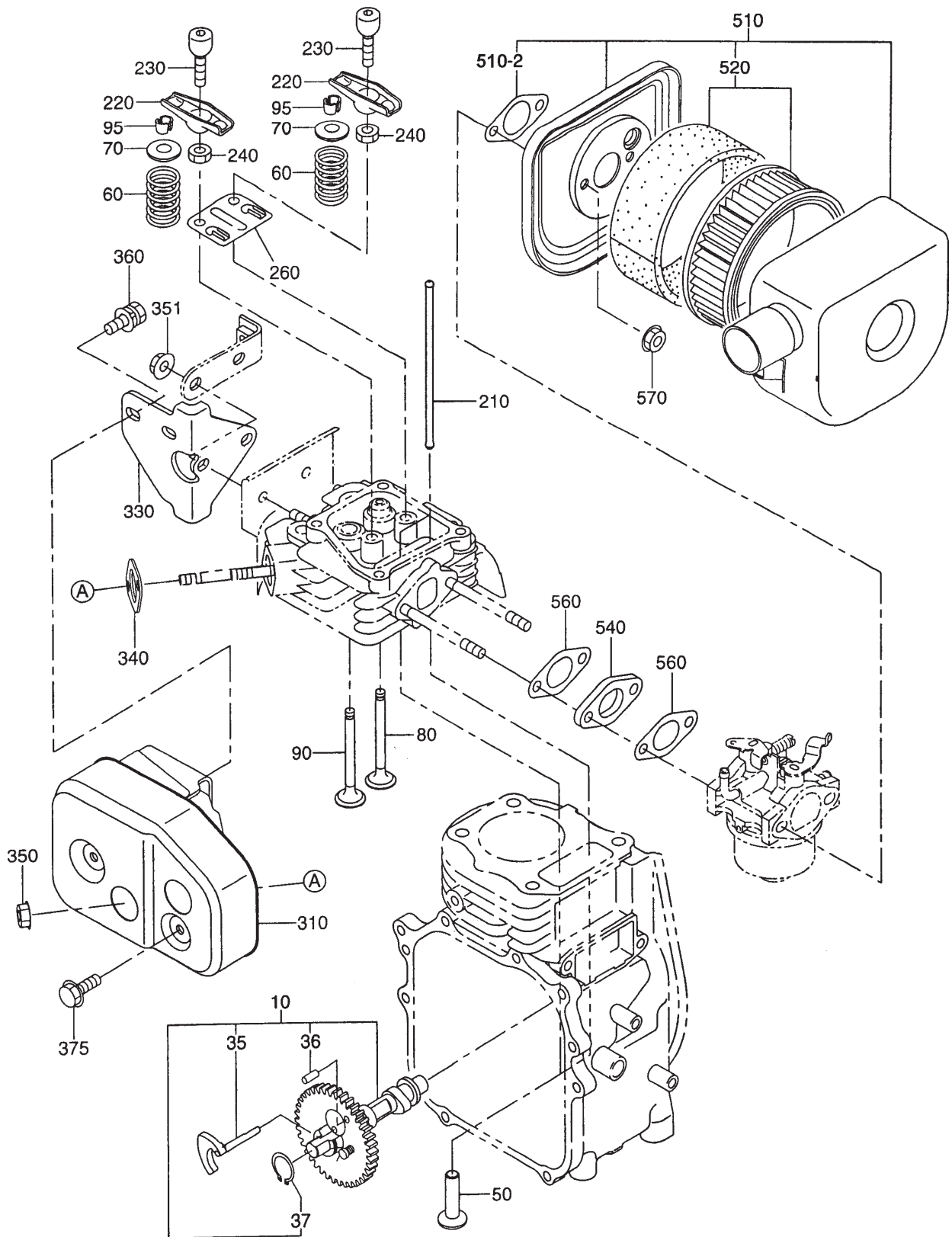
ROBIN EH09 ENGINE — CRANKSHAFT AND PISTON ASSY.



ROBIN EH09 ENGINE — CRANKSHAFT AND PISTON ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2742010131	CRANKSHAFT CP	1	
40	0230200100	SPACER T=0.8	1	
	0230200110	SPACER T=1.0	1	
	0230200120	SPACER T=1.2	1	
50	0021812000	NUT	1	
60	030212300	SPRING WASHER	1	REPLACES 0032012000
70	0053203101	WOODRUFF KEY	1	
75	0053204201	WOODRUFF KEY	1	
170	0173120010	LOCK NUT	1	
310	2302250120	CONNECTING ROD ASSY.....	1	INCLUDES ITEMS W/%
320%	2302300123	CONNECTING ROD BOLT	2	
350	2302330103	PISTON PIN	1	
360	2742340103	PISTON	1	
	2742340203	PISTON 0.25MM	1	
	2742340303	PISTON 0.50MM	1	
370	2742350107	PISTON RING SET	1	
	2742350207	PISTON RING SET 0.25MM	1	
	2742350307	PISTON RING SET 0.50MM	1	
380	0565110010	CLIP	2	

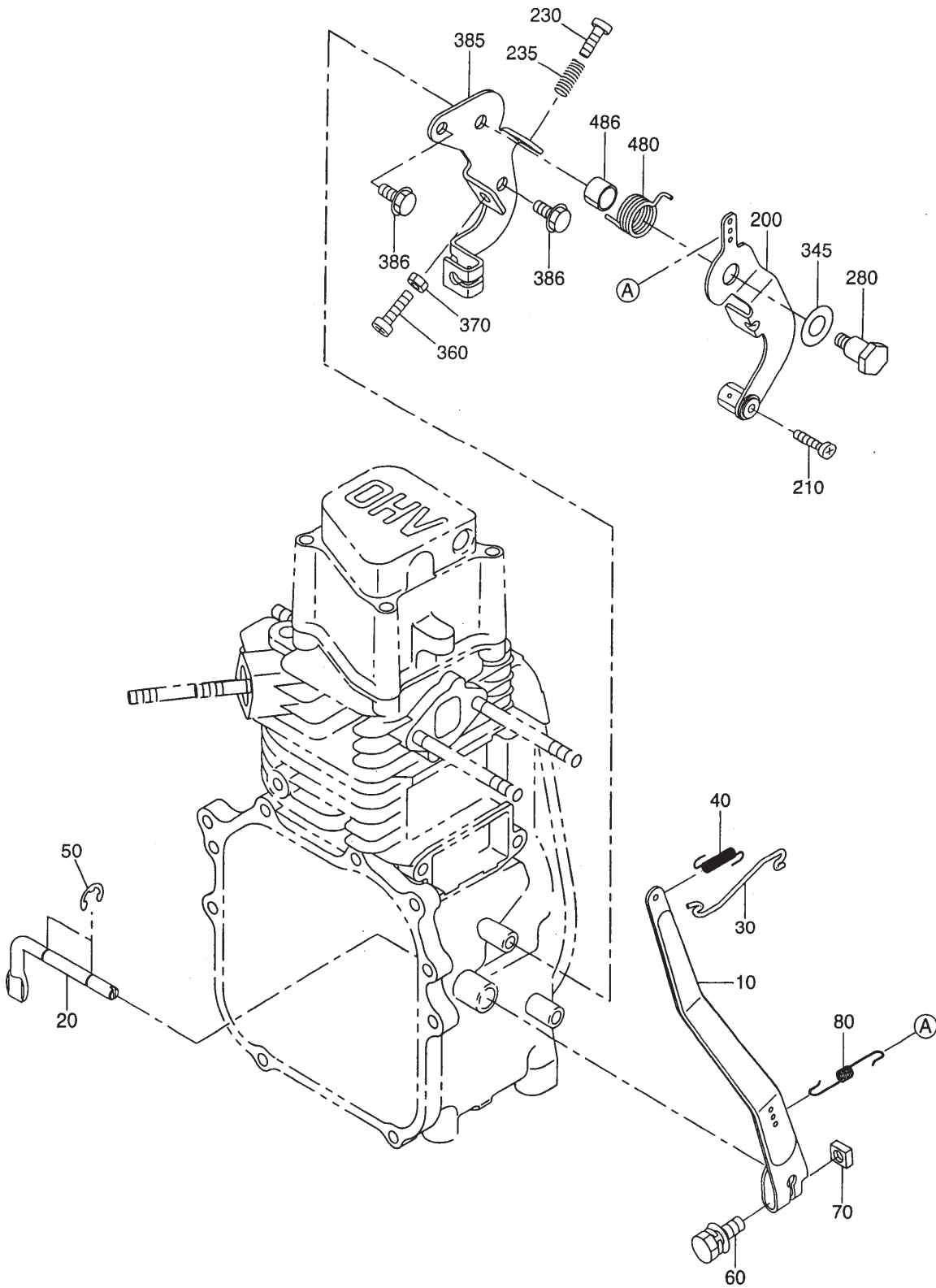
ROBIN EH09 ENGINE — INTAKE AND EXHAUST ASSY.



ROBIN EH09 ENGINE — INTAKE AND EXHAUST ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2743170101	CAMSHAFT CP	1	INCLUDES ITEMS W/%
35%	2743640103	RELEASE LEVER	1	
36%	0051904100	SPRING PIN	1	
37	0031517000	SNAP RING	1	
50	2743330103	TAPPET	2	
60	2743360103	VALVE SPRING	2	
70	2743370103	SPRING RETAINER	2	
80	2743340103	INTAKE VALVE	1	
90	2743350103	EXHAUST VALVE	1	
95	13210KA031	COLLET VALVE	4	
210	2743530103	PUSH ROD	2	
220	2743600103	ROCKER ARM	2	
230	2693580103	BOLT (PIVOT)	2	
240	0170060090	NUT	2	
260	2743650103	GUIDE PLATE	1	
310	2743010101	MUFFLER CP	1	
330	2743700111	BRACKET CP (MUFFLER)	1	
340	2303520101	GASKET CP (EXHAUST)	1	
350	0176060030	SELF LOCK NUT	2	
351	0023706000	FLANGE NUT	2	REPLACES 0023806000
360	0011306120	BOLT AND WASHER ASSY.	2	REPLACES 0011406120
375	0110060050	FLANGE BOLT	2	REPLACES 0110060010
510	2743260100	AIR CLEANER ASSY.	1	INCLUDES ITEM W/* BELOW UNIT S/N G4067
510	2743260310	AIR CLEANER ASSY.	1	INCLUDES ITEM W/% UNIT S/N G4067 & ABOVE
510-2*%	2303262008	PACKING	1	
520*	2743261007	ELEMENT ASSY.	1	
520%	2743260307	ELEMENT ASSY.	1	UNIT S/N G4067 & ABOVE
540	2303290103	INSULATOR	1	
560	2303590203	GASKET (INSULATOR)	2	

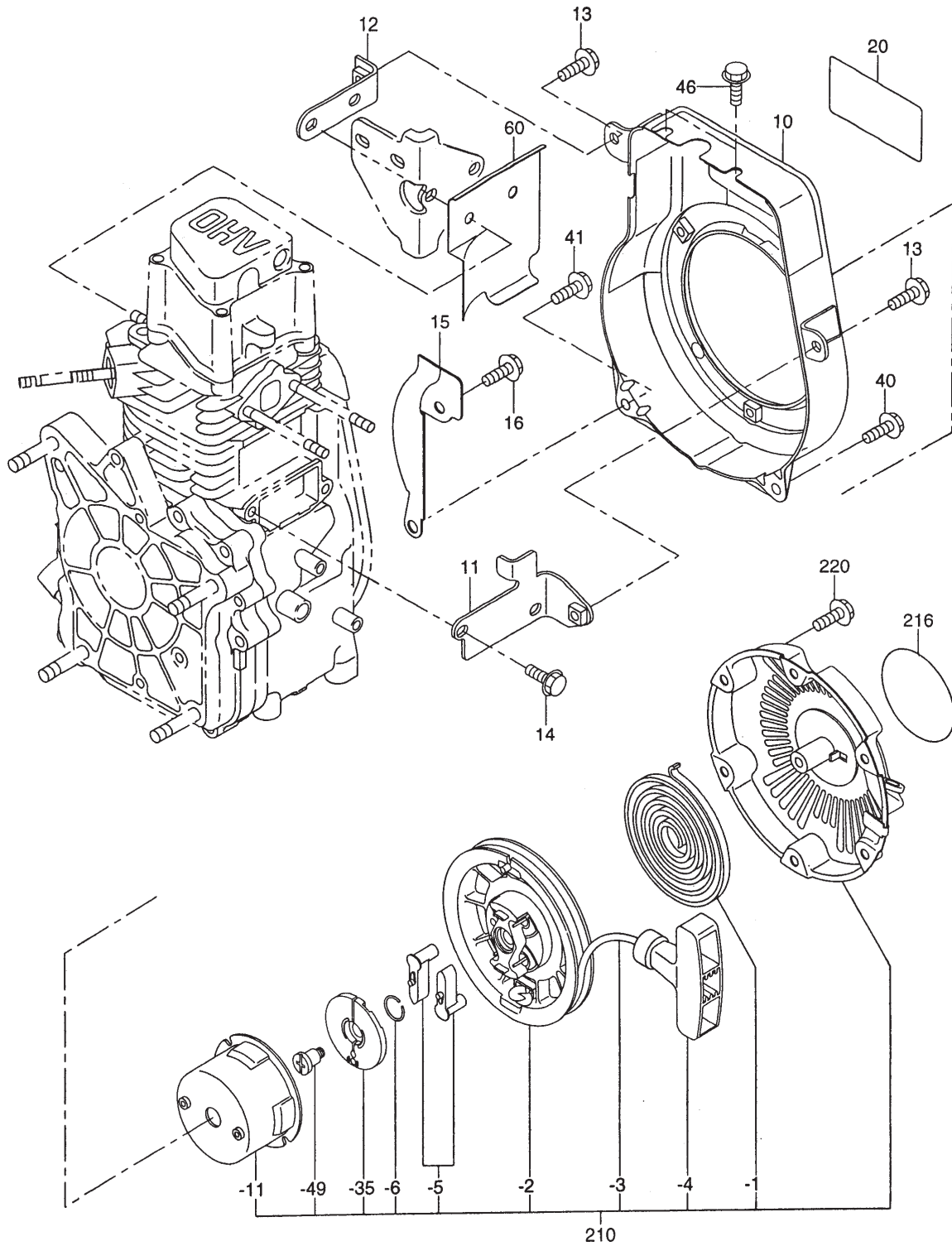
ROBIN EH09 ENGINE — GOVERNOR ASSY.



ROBIN EH09 ENGINE — GOVERNOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2744230103	GOVERNOR LEVER	1	
20	2304220103	GOVERNOR SHAFT	1	
30	2744270103	GOVERNOR ROD	1	
40	1064280113	ROD SPRING	1	
50	0031305000	CLIP	2	
60	0011406250	BOLT AND WASHER ASSY.	1	
70	0186060020	NUT	1	
80	2744250103	GOVERNOR SPRING	1	
200	2304330210	SPEED CONTROL ASSY.	1	
210	0043104140	SCREW (PAN HEAD)	1	
230	0140040070	SCREW	1	
235	2054600323	CONTROL SPRING	1	
280	2264310301	LINK PIVOT CP	1	
345	0217100020	FRICTION WASHER	1	
360	0043106300	SCREW	1	
370	020106050	NUT	1	REPLACES 0022706000
385	2744510101	BASE PLATE CP	1	
386	0110060050	FLANGE BOLT	2	REPLACES 0110060010
480	2264500313	RETURN SPRING	1	
486	0230100040	SPACER	1	

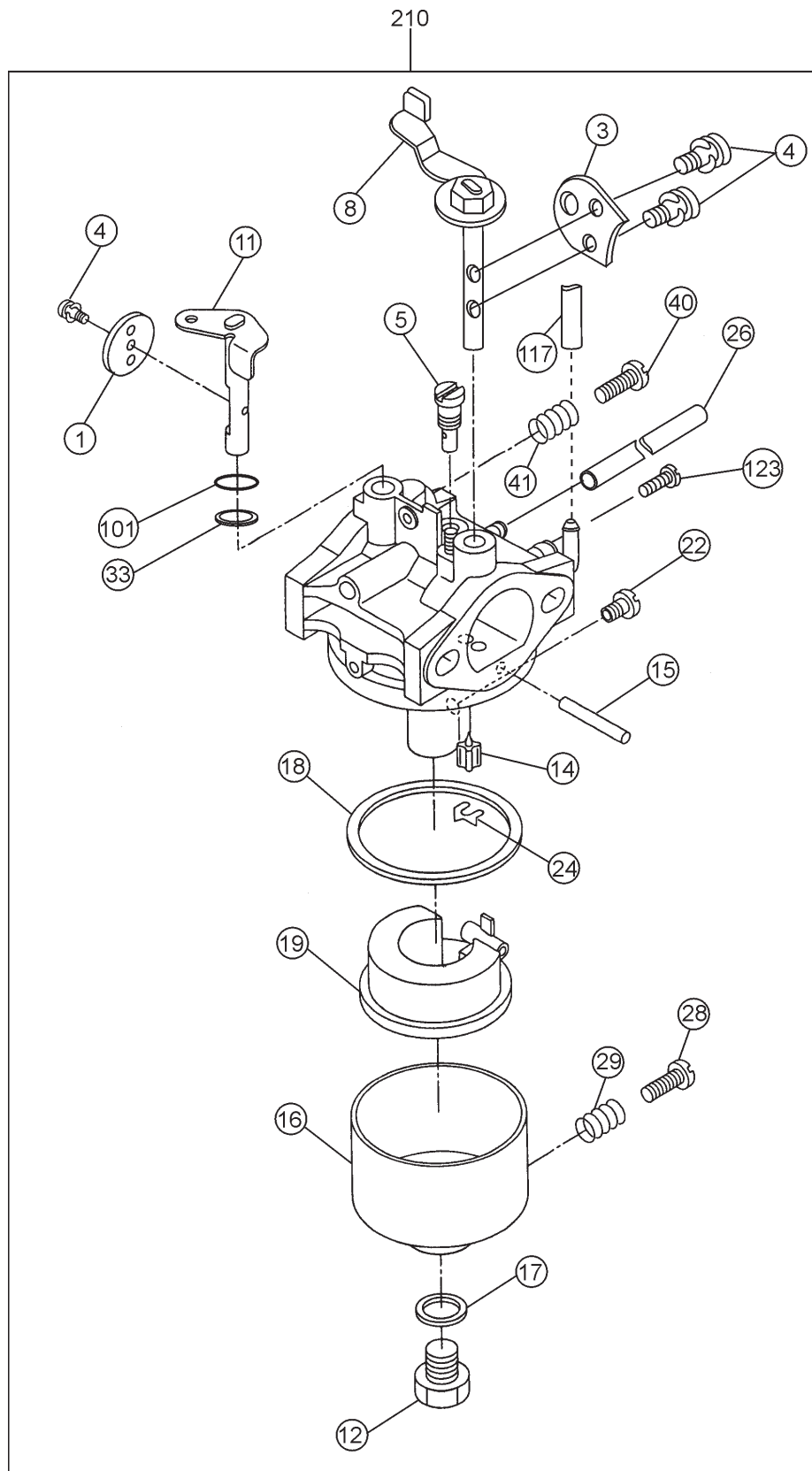
ROBIN EH09 ENGINE — RECOIL STARTER ASSY.



ROBIN EH09 ENGINE — RECOIL STARTER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2745120211	BLOWER HOUSING CP	1	
11	2745510121	BLOWER H. BKT. 1 CP	1	
12	2745520101	BLOWER H. BKT. 2 CP	1	
13	0110060020	FLANGE BOLT	2	
14	0011606140	BOLT AND WASHER ASSY.	2	
15	2745500101	BLOWER GUIDE CP	1	
16	0110060050	FLANGE BOLT	1	REPLACES 0110060010
20	2749170103	LABEL (TRADE MARK)	1	
40	0110060050	FLANGE BOLT	1	REPLACES 0110060010
41	0110060020	FLANGE BOLT	1	
46	0110060020	FLANGE BOLT	2	
60	2745260103	CYLINDER BAFFLE	1	
210	2745020100	RECOIL STARTER ASSY.	1	INCLUDES ITEM W/*
210-1*	2745011508	SPIRAL SPRING	1	
210-2*	2745012008	REEL	1	
210-3*	2745011008	STARTER ROPE	1	
210-4*	2615010008	STARTER KNOB	1	
210-5*	2705012508	RATCHET	2	
210-6*	2275013108	FRICTION SPRING	1	
210-11*	2745014508	STARTING PULLEY	1	
210-35*	2705026108	RATCHET GUIDE	1	
210-49*	2275015208	SET SCREW	1	
216	2069170103	LABEL (TRADE MARK)	1	
220	0110060020	FLANGE BOLT	3	

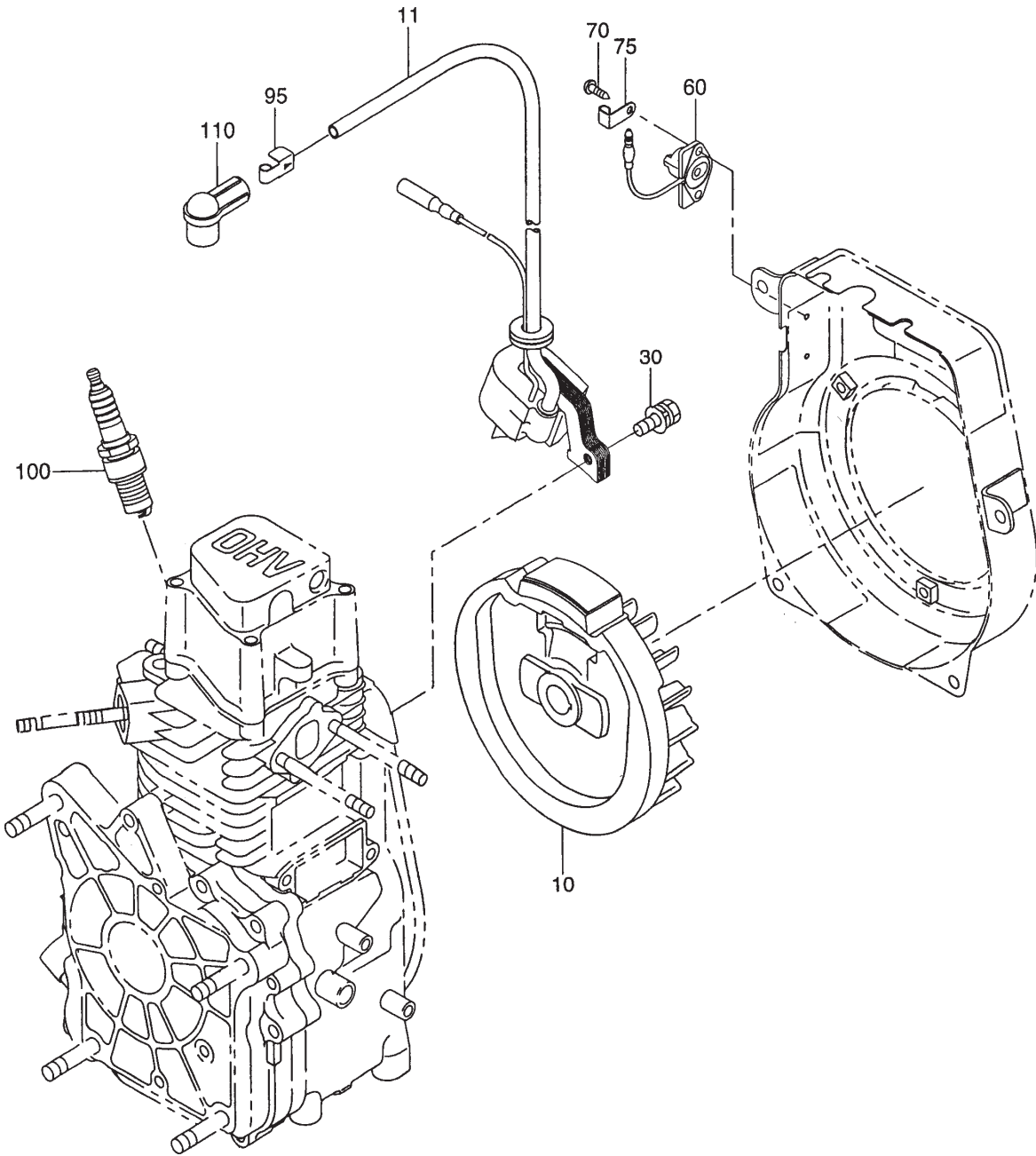
ROBIN EH09 ENGINE — CARBURETOR ASSY.



ROBIN EH09 ENGINE — CARBURETOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
210	2746230100	CARBURETOR ASSY.	1	INCLUDES ITEMS W/*
-1*	2746253508	THROTTLE VALVE	1	
-3*	2306252508	CHOKE VALVE	1	
-4*	2376245108	SCREW	3	
-5*	2346242108	PILOT JET	1	
-8*	2746252008	SHAFT ASSY. (CHOKE)	1	
-11*	2746253008	SHAFT ASSY. (THROTTLE)	1	
-12*	2246254308	BOLT	1	
-14*	2268250208	NEEDLE VALVE ASSY.	1	
-15*	2146251508	PIN	1	
-16*	2306255308	FLOAT CHAMBER BODY	1	
-17*	2078234508	INSERT WASHER	1	
-18*	2306254008	PACKING	1	
-19*	2306250608	FLOAT ASSY.	1	
-22*	2746240008	MAIN JET	1	
-24*	2266270118	CLIP	1	
-26*	2746235108	HOSE	1	
-28*	2246245008	SCREW	1	
-29*	2106231808	SPRING	1	
-33*	2306258108	SEAL	1	
-40*	1066239308	SCREW	1	
-41*	2066244608	SPRING	1	
-101*	2306258208	PACKING	1	
-117*	2746235008	HOSE	1	
-123*	2276240408	MAIN JET	1	

ROBIN EH09 ENGINE — ELECTRIC DEVICE ASSY.



ROBIN EH09 ENGINE — ELECTRIC DEVICE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2307020831	FLYWHEEL CP	1	
11	2747020101	IGNITION COIL CP	1	
30	0011706250	BOLT & WASHER ASSY.	2	
60	0660000361	SWITCH ASSY.	1	
70	0150040090	TAPPING SCREW	2	
75	0566030010	CLAMP	1	
95	0659000010	PLUG TERMINAL	1	
100	0650140460	SPARK PLUG, NGK BM6A	1	
110	2307510113	SPARK PLUG CAP	1	

TERMS AND CONDITIONS OF SALE — PARTS

PAYMENT TERMS

Terms of payment for parts are net 30 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
 - a. The parts numbers and descriptions must match the current parts price list.
 - b. The list must be typed or computer generated.
 - c. The list must state the reason(s) for the return.
 - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
 - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.

5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
 - a. Obsolete parts. (If an item is in the price book and shows as being replaced by another item, it is obsolete.)
 - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
 - c. Any line item with an extended dealer net price of less than \$5.00.
 - d. Special order items.
 - e. Electrical components.
 - f. Paint, chemicals, and lubricants.
 - g. Decals and paper products.
 - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for five working days from notification, pending instructions. If a reply is not received within five days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted, for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A \$35.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable hereunder for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. Apart from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

Effective: February 22, 2006

OPERATION AND PARTS MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL
NUMBER ON-HAND WHEN CALLING

UNITED STATES

Multiquip Corporate Office

18910 Wilmington Ave. Tel. (800) 421-1244
Carson, CA 90746 Fax (800) 537-3927
Contact: mq@multiquip.com

Service Department

800-421-1244 Fax: 310-537-4259
310-537-3700

Technical Assistance

800-478-1244 Fax: 310-943-2238

MQ Parts Department

800-427-1244 Fax: 800-672-7877
310-537-3700 Fax: 310-637-3284

Warranty Department

800-421-1244 Fax: 310-943-2249
310-537-3700

MEXICO

MQ Cipsa

Carr. Fed. Mexico-Puebla KM 126.5 Tel: (52) 222-225-9900
Momoxpan, Cholula, Puebla 72760 Mexico Fax: (52) 222-285-0420
Contact: pmastretta@cipsa.com.mx

CANADA

Multiquip

4110 Industriel Boul. Tel: (450) 625-2244
Laval, Quebec, Canada H7L 6V3 Tel: (877) 963-4411
Contact: jmartin@multiquip.com Fax: (450) 625-8664

UNITED KINGDOM

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Globe Lane, Fax: 0161 339 3226
Dukinfield, Cheshire SK16 4UJ
Contact: sales@multiquip.co.uk

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This manual MUST accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

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